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THE PANAMA CANAL
WASHINGTON OFFICE

MANUAL OF INFORMATION
CONCERNING EMPLOYMENTS
FOR THE
PANAMA CANAL SERVICE

REVISED AUGUST 4, 1916



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WARNING.

Persons seeking employment on the Panama Canal or the Panama Railroad are cautioned not to go to the Isthmus without an appointment secured through the Washington Office of The Panama Canal or through an authorized recruiting agent. Such new appointments as are necessary will be made from approved applications on file in the Washington Office. Persons who go to the Isthmus without previous appointment, with the hope of obtaining employment on the Panama Canal or the Panama Railroad, do so on their own responsibility. The same examination, as regards physical and other qualifications, must be passed on the Isthmus before employment there as is required by those who are appointed through the Washington Office. The appointments made on the Isthmus are principally in minor-grade positions, including unskilled labor, in which the rates of pay are as low as 10 cents an hour. An unauthorized journey to the Isthmus in expectation of obtaining work may result in hardships and cause unnecessary expense to the applicant. The Governor of The Panama Canal desires to discourage such journeys and will accept no responsibility for conditions that may arise therefrom.

NOTICE.

Address all inquiries to "Chief of Office, The Panama Canal, Washington, D. C."

MANUAL OF INFORMATION, PANAMA CANAL SERVICE.

GENERAL INFORMATION.

Section 1.—All work relating to the maintenance and operation of the Panama Canal is under Government control. The Executive order of January 27, 1914, provides for the following departments or offices, under the direct supervision of the Governor of The Panama Canal:

Operation and Maintenance; Purchasing; Supply; Accounting; Health; and Executive Secretary.

The conditions of employment are outlined in an Executive order dated February 2, 1914, and will be found in section 14. New appointees are furnished free steamship transportation and usually sail from New York City, but under certain conditions may sail from New Orleans or San Francisco. They must pay their own railroad fare to the port of sailing. Employees are supplied with furnished bachelor quarters. New appointees are not permitted to take their families with them to the Isthmus on account of the scarcity of family quarters. Meals can be obtained at the Government hotels at about 30 cents a meal and upward. Employees are allowed certain leave of absence with pay and free hospital attendance, as stated in the conditions of employment. All new employees must be in good health and physically sound. Health conditions on the Isthmus are good.

The next three sections state how employments are made on the Panama Canal, including the Panama Railroad on the Isthmus. Only thoroughly experienced men, including mechanics who have worked several years as journeymen, receive appointments. The services of persons with so-called "all-round" experience can not be utilized. If a person secures work through false statements as to his past experience, or is found to be incompetent, he will be discharged. No appointments are issued in the United States to women for duty on the Isthmus, except to the positions of trained nurse, telephone operator, and school-teacher. The requirements for these positions are given in section 12.

EMPLOYMENTS.

Sec. 2. Civil-service examination.—Under the Executive order of February 2, 1914, the following-named positions in the Panama Canal service must be filled through competitive civil-service examination: Clerk (all kinds, including timekeeper and bookkeeper), stenographer, typewriter, surgeon, physician, trained nurse, and draftsman. All requests for information relative to the date, place, and nature of examinations and for the required application form should be addressed to the "United States Civil Service Commission, Washington, D. C." It is useless to write to the Panama Canal office or the Civil Service Commission inquiring as to the prospects for employment in event a civil service examination is passed, as it is impracticable to give this information.

The usual entrance salaries attached to positions subject to civil-service examination are the following: Clerks, \$100 and \$125 a month; stenographers and typewriters,

\$125; physicians, \$150; female nurses, \$65 with subsistence and laundry of uniforms; male nurses, \$90 without subsistence and laundry; and draftsmen, \$125 and \$150 a month.

No appointments are made in the United States to subordinate clerical positions paying a salary of \$75 a month or less.

Sec. 3. Excepted from civil-service examination.—Under the same Executive order all positions other than those specified in the preceding paragraphs are excepted from civil-service requirements and no examination under the civil-service rules is necessary to become eligible for appointment. A list of these excepted positions in which vacancies may occur will be found in section 12. For these excepted positions persons are selected in the United States through written application to the Washington Office of The Panama Canal. Persons desiring to apply for an excepted position in which vacancies exist at the time, or are likely to occur in the near future, will be furnished with a blank form for that purpose. This form, when properly filled out, should be mailed to "Chief of Office, The Panama Canal, Washington, D. C." With the application should be sent (1) such letters of recommendation, clearances, or service letters, issued in recent years, as the applicant may have in his possession, covering the kind of work for which he applies and written on the official letterheads of the companies or persons by whom he was employed, and (2) a recent unmounted finished photograph of himself, a postal card photograph being satisfactory. The photograph is needed for identification.

If an applicant's qualification are approved, his name will be entered on the waiting list for the position for which approved, and he will be offered employment in his turn as his services are needed. If they are disapproved his papers can receive no further consideration and his letters of recommendation will be returned to him.

Sec. 4. Transfers.—Transfers from the departmental service or from the field service at large or of a person residing outside continental United States to the Panama Canal service are not encouraged. However, applications may be submitted on the proper form and the same will be given due consideration.

CITIZENSHIP.

Sec. 5. All persons employed in the Panama Canal service who receive over \$75 a month or over 40 cents an hour must be citizens of the United States or of the Republic of Panama, and such citizens will be given preference for employment in all grades. A foreign-born applicant is required to submit with his application his final certificate of naturalization as an American citizen or a certified copy thereof, which will be returned immediately after inspection. A person claiming citizenship through the naturalization of his father must submit his father's certificate. **A declaration of intention to become an American citizen (first papers) is not sufficient.**

AGE LIMITS.

Sec. 6. The minimum age limit for all positions, unless otherwise stated, is 20 years. The maximum age limit for operator (telephone switchboard) is 26 years; rodman, hydrographer, interne, and physician, 30 years; fireman (fire department), policeman, hostler, locomotive engineer, conductor, trainman, nurse, levelman, transitman, 40 years; all other positions 45 years.

PHYSICAL EXAMINATION.

Sec. 7. Before being permitted to sail for the Isthmus, new employees and those reemployed must undergo a rigid physical examination by a designated physician after appointment has been actually issued, but not at the time the application is filed. There will be no charge for this examination, but the appointee must pay

his fare to the place of examination. The official physicians are located at the ports of departure and in a number of the large cities throughout the United States.

Such diseases as rupture in any form, weak lungs or heart, venereal diseases of all kinds, aggravated varicocele, varicose veins, and piles, epilepsy, chronic alcoholism, deformed limbs, loss of fingers, defective eyesight and hearing (especially of pilots and railroad men), and other serious bodily defects, will be grounds for rejection. Persons wearing a truss to protect a rupture will be rejected. Persons who have slight defects in eyesight corrected by glasses should wear their glasses when presenting themselves for this examination.

Any concealment of material facts relative to the applicant's physical condition, past or present, when being examined by a physician, will render him liable to dismissal from the service.

PROMOTIONS.

Sec. 8. When practicable, new appointments are made at the lowest entrance salary and to the lowest grades, mechanics being employed in the grade of journeymen. Vacancies occurring in the higher grades are filled by promotion. Efficient service on the Isthmus and the demonstration of ability which will justify advancement, control in the making of promotions. For these reasons initial appointments as foreman are seldom made as these positions are filled by promotion. Length of service will be considered in connection with promotions only where necessary to facilitate choice between employees equally entitled to promotion on the basis of efficiency.

WORKING HOURS.

Sec. 9. Eight hours of labor constitute the working day on the Isthmus. In the event of overtime being required of employees paid by the hour they will receive time and a half for such overtime service, although it is not the practice to require overtime work except in emergency. No extra compensation for overtime work will be paid to persons whose compensation is fixed on a monthly or annual basis, except to locomotive engineers and conductors in the employ of the Panama Railroad.

PAYMENT OF SALARY.

Sec. 10. Salaries and wages are paid once a month. Under no circumstances should a person proceed to the Isthmus without sufficient money to pay his expenses during the first few weeks. An employee can not assign a portion of his salary for payment in the United States to his family. Remittances can be made by postal money orders payable in the United States.

STEAMSHIP TRANSPORTATION.

Sec. 11. New employees are furnished free steamship transportation to the Isthmus, which includes meals on the steamer, but must pay the expense of their journey to the ports of departure. Railroad transportation can not be advanced. See paragraphs 3, 14, and 15 of the conditions of employment for more detailed information regarding transportation.

The Government rate on the steamers of the Panama Railroad Steamship Line out of New York City is, at the present time, \$30 for each adult; half rates for children between 6 and 12 years, and children under 6 years free. The above rates include meals on the steamer. This rate, under present regulations, is granted once each year to employees on vacation.

Employees and members of their families are allowed to take on board the steamers of the Panama Railroad Steamship Line not to exceed 250 pounds of baggage free of charge for each adult. Excess baggage on these steamers will be charged for at the rate of 1 cent a pound.

The Government rate on the steamers of the United Fruit Co. out of New Orleans is about \$50 for each adult; children between 3 and 12 years, one-half of adult fare; one child under 3 years, free. The rate out of San Francisco is \$85. The above rates are subject to change.

POSITIONS AND WAGES.

Sec. 12. Following is a partial list of positions, together with the specifications and rates of pay, that exist in the Panama Canal service, including the Panama Railroad on the Isthmus. The publishing of this list does not mean necessarily that there are vacancies now in any of the positions named. In fact, there may be no further need whatever, or possibly only at rare intervals, for new employees in some of the positions. Information as to whether or not vacancies actually exist in any given position can always be procured by inquiring of the Washington Office of the Panama Canal. Strict attention is called to the requirements of each position, and unless an applicant has had the necessary experience and can satisfactorily prove it, he will not accomplish anything by filing his papers.

The Panama Canal act, approved August 24, 1912, provides that compensation paid employees on the Panama Canal shall not exceed by more than 25 per cent the compensation paid by the Government in continental United States for similar work. The compensation of all classes of employees has been adjusted on that basis and is subject to an annual readjustment.

Usually only men competent to earn the highest rate of pay allowed for the trade will be asked for from the United States, but this will not always be the case. The maximum wage for each trade is given in the paragraph referring to that trade, but the rate actually paid will be only the amount which the services of the employee justify.

All mechanics should take with them to the Isthmus the tools of their trade that it is customary for them to carry with them in the States. Tools can not be bought to advantage on the Isthmus. For a partial list of tools required, see section 13.

Owing to the distance of the Isthmus from sources of labor supply, it is necessary occasionally to use mechanics in trades other than their own but allied thereto. Employment of mechanics in trades other than their own is avoided wherever possible, but when heads of departments or divisions consider such employment necessary, employees are expected to do the best they can with the work assigned. In general, such employment will be temporary only, and if the pay of the allied trade is less than that for which employed there will generally be no reduction in pay.

Heretofore a large percentage of the work done on the Isthmus has been in connection with railroad and railroad-excavating equipment. This work is rapidly diminishing in quantity and the amount to be done on steamships and marine and dredging equipment is increasing. For this reason marine experience will frequently be specified in making requisitions for employees, and any experience in this line should be fully set forth in applications.

ANGLESMITH.

Special experience at angle-iron work should be stated in the application, and in order to be competent must be expert in making staples for bulkhead water-tight and oil-tight work. 71 cents an hour.

BAKER.

Bread, cake, and pastry. Must have had at least five years' experience in large bakeries. \$125 a month. (See also Superintendent.)

BLACKSMITH.

General.—One who has served an apprenticeship in a locomotive, railroad, or marine forging shop, who has had experience in forging various classes of light, medium, and fairly heavy work with Bradley hammers and steam hammers from 600 to 3,000 pounds capacity, and who can work from blue print or drawing. 66 cents an hour.

Heavy forger.—Experienced in and capable of handling heavy forgings by means of cranes from heavy fires or furnaces under power hammers. 77 cents an hour. General blacksmiths will be considered in the line of promotion to this trade if the quantity and character of the work and their qualifications for the same justify their employment.

Springmaker.—This rating will be included under the heading "General blacksmith," but special experience along these lines should be given in the application, and should include experience and ability to handle flat spring work of the grade and weight used for driving purposes under locomotives and for cars and other similar purposes. 66 cents an hour.

Tool dresser.—Experienced in and capable of forging all kinds of tools for lathes, planers, slotters, etc., and of tempering taps, reamers, dies, metal cut-off tools, bolt headers, and forging tools; also of considerable experience in handling the different makes of steel up to and including modern "blue-chip" or high-speed tool steel. 66 cents an hour. This rating will be included under the heading "General blacksmith."

BOAT BUILDER.

Must have served apprenticeship or worked at this trade for at least two years. Must be competent to lay off lines on floor and to lay off, repair, and erect framing and planking for small boats of all types. 65 cents an hour.

BOILERMAKER.

General.—Must have completed apprenticeship and subsequently had at least three years' experience in general boiler work in either marine or locomotive shops. Must be thoroughly familiar with all kinds of work on locomotive, stationary, or marine boilers. 65 cents an hour.

BRICKLAYER.

Must be thoroughly competent as bricklayers. 84 cents an hour.

BUTCHER.

Must have had several years' experience in retail meat cutting and selling. Must supervise colored help. \$137.50 a month.

CABINETMAKER (COACH AND GENERAL).

Must have had at least two years' experience in performing all classes of coach and cabinetwork in a railroad coach shop or a regular car builder's coach shop, or a general cabinetmaker's shop; and in addition must have previously worked four years at some branch of the carpenter's trade, such as house carpenter or ship carpenter. 66 cents an hour.

CABLE SPLICER.

See Rigger and Wireman.

CAR INSPECTOR.

Must have had at least two years' experience as car repairer on freight cars in railroad yard and at least one year's experience as a car inspector in railroad yard service, preferably at an interchange point. Car inspector may be assigned to repair work in

addition to their inspection work. Must furnish tools. 56 cents an hour. A limited number are on the monthly roll at \$150 a month, but are generally chosen from employees who have proven their ability.

CAR REPAIRER.

One who has had at least three years' experience (within the last four years) as car carpenter or repairer in making repairs to wooden and steel cars in railroad repair shops, and must also be experienced on truck work. Must furnish tools. 56 cents an hour.

CARPENTER.

Car.—Must have served at least three years as carpenter repairing or building freight cars in a regular car shop. 56 cents an hour.

House and concrete form.—One who has had experience in concrete-form work and in ordinary framing, and can fit, hang, and trim doors and windows, build stairs, etc., and is ordinarily expert with common carpenter's tools. 67 cents an hour.

Ship.—See Shipwright.

CHEMIST (WATER).

Must have had one year's experience in charge of operation of rapid mechanical gravity type filters. Must be a graduate of recognized school with a degree either in sanitary engineering or sanitary chemistry, and must be qualified to do all lines of water analysis work. \$125 and \$150 a month.

CHIPPER AND CALKER.

Must be experienced in chipping and calking steel plates, with special reference to ship work, including the use of hand and pneumatic tools on water-tight and oil-tight work. 61 cents an hour.

CLERK.

Male only. All clerical positions are subject to civil-service examination. See section 2. Clerks who pass the typewriting examination will be given preference. Appointments made at entrance salary of \$100 and \$125 a month and experience along one or more of the following lines is required:

Clerk with knowledge of stenography and typewriting.

Clerk with knowledge of typewriting.

Clerk with knowledge of bookkeeping.

Clerk with knowledge of time keeping.

Clerk with general business training and experience.

Postal.—Men who are experienced in all branches of post-office work. Must have had at least one year's experience as a clerk (not as carrier) in United States, or one year in Canal Zone, post offices, and be familiar with the receipt, distribution, and dispatch of mail matter, the issuance of money orders, registration of mail, and the preparation of the various reports required of postmasters. This position is filled through civil-service examination or by transfer from classified post offices in the United States. However, before being eligible for transfer applicants must have passed civil-service examination for Canal Zone postal clerk or a first-grade clerical examination for the departmental service. Inquiries respecting examinations and eligibility for transfer should be addressed to the "U. S. Civil Service Commission, Washington, D. C." Persons who are in the classified civil service and eligible for transfer to the Canal Zone postal service should make application to the "Chief of Office, The Panama Canal, Washington, D. C." Entrance salary, \$100 and \$125 a month. The positions of postmaster and assistant postmaster are filled by the promotion of postal clerks.

COFFEE ROASTER.

Must have had not less than five years' experience in roasting, grinding, and blending coffee, and be competent to supervise and instruct white and colored help. Work in this section includes the packing of rice, sugar, coffee, etc., for sale in the retail stores. \$125 to \$150 a month.

COMMISSARY.

See the specifications for the various commissary positions listed under their respective titles.

COMMISSARY ASSISTANT.

Dry goods.—Wide experience in the operation of dry goods stores handling men's and ladies' furnishings, notions, and dress goods. Will be placed in charge, under the store manager, of dry goods departments in retail stores. Should understand window dressing, the display of goods and manner of selling, the discipline of salesmen, the art of merchandising, etc. It will be their duty to see that patrons are properly served and they will come in constant contact with the public. Entrance salary, \$150 a month.

Provisions.—Wide experience in the operation of meat, fruit, and vegetable markets and grocery stores. Will be placed in charge, under store manager, of provision departments in retail stores. Should understand meat cutting, the display of fruits, vegetables, and groceries, the manner of selling such supplies, the discipline of salesmen, etc. It will be their duty to see that patrons are served properly and they will come in contact with the public constantly. Entrance salary, \$150 a month.

CONDUCTOR.

Yard or switch service, \$150 a month. Promotion to \$190 a month when assigned to main-line service on the Isthmus.

COOK.

Man with experience in American-plan hotels. One with all-round experience only is qualified, not simply pastry or meat cooks. \$75 to \$137.50 a month, including subsistence.

COPPERSMITH.

Must have had at least three years' experience as a journeyman coppersmith and must be capable of doing general coppersmithing done in marine, repair, and construction shops. Must be capable of making and handling copper pipes up to 12 inches in diameter and of brazing flanges thereon. 66 cents an hour.

COREMAKER.

See Molder.

CRANEMAN.

Dipper dredge.—See Dredging positions.

Steam shovel.—Should be experienced on Bucyrus and Marion shovels. \$167.50 a month.

DIVER.

Diving will ordinarily be done by employees with the rating of rigger, who will be paid diver's wages only when actually employed in diving. Must present certificates showing satisfactory service in water at least 50 feet deep. \$1.53 an hour for time actually employed in diving.

DRAFTSMAN.

All drafting positions are subject to civil-service examination. See section 2. Entrance salaries range from \$125 to \$175 a month, according to experience and capacity.

Architectural.—Salary depends on requirements for position.

Marine.—Should be experienced in marine design and capable of making drawings of floating equipment, such as tugs, barges, dump scows, derrick boats, and dredges.

Mechanical (first class).—Must have had at least three years' experience in drafting, and, in addition, have experience in shop work or on construction work, or must be a graduate of a technical institution, with at least one year's experience in drafting or on construction work. Must be able to handle original design work on power plants, locomotives, steam shovels, and structural work, and be competent to check detailed shop drawings. Must have a good working knowledge of mathematics, and be able to figure stresses and strains in mechanism and in structures, such as roof trusses. Must have a good knowledge of materials used in construction and be acquainted with shop methods and procedure in handling and executing work. \$150 a month.

Mechanical (second class).—Must have had either at least two years' experience drafting (or as an alternative, one year's experience in drafting in addition to at least one year shop or construction experience), or must be a graduate of a mechanical engineering course of a technical institution. Must be able to make detailed shop drawings from rough sketches and assembly drawings. \$125 a month.

Structural steel.—Salary depends upon requirements for position.

Topographical.—Need not be a graduate civil engineer, but must be able to calculate simple problems in algebra and trigonometry. Should be able to plat contour maps from stadia notes, make railroad-track maps and city plats. Should be able to calculate cross sections and reduce them to cubic yards. Should have at least one year's experience as a draftsman and be able to do fairly good lettering and fairly neat line work. No experience as a designer is necessary. Should be able to run levels and calculate grades, and be willing to run levels at times when not needed in the office. \$125 a month.

DREDGING POSITIONS.

Craneman (dipper dredge, 15-yard).—Should be able to take care of dipper dredge engine and boiler and have craneman's experience on large dipper dredges. This position is usually filled by promotion of dipper dredge engineers. For salaries of these positions, see "Mate" in schedule, page 14.

Engineer (dredge).—Must be thoroughly experienced in operating the type of dredge for which appointment is made. Day and night work. For salaries see schedule, page 14.

Engineer (tugboat, self-propelling barge, marine general).—For salaries see schedule, page 14.

Leverman, or operator (pipe-line dredge).—Must be experienced in operating pipe-line dredge. For salaries see schedule, page 14.

Master (dredge).—Must be thoroughly experienced in operating and caring for all machinery, including electrical plant, on type of dredge for which appointment is made. Day and night work. (*Self-propelling barge*).—Must have had experience as master on a tugboat and be accustomed to harbor work. Day and night work. (*Steam tug*).—Must have had experience as master on steam tug and be accustomed to harbor work. Day and night work. For salaries see schedule, page 14.

Mate (pipe-line dredge).—First mate: Should have at least one year's experience in similar position on cutter pipe-line dredge, 16 inches or larger. Second mate: Should have at least six months' experience in similar position on cutter pipe-line

dredge, 16 inches or larger. (*Self-propelling barge*).—Must have had experience as master on a towboat and be accustomed to harbor work. Day and night work. (*Steam tug*).—Must have had experience as master on steam tug and be accustomed to harbor work. Day and night work. For salaries see schedule, page 14.

DRILL RUNNER.

Drill barge.—Should be experienced rock driller on drill-barge work. \$155 a month.

DRUGGIST.

Must be a graduate pharmacist and hold license. Entrance salary, \$100 a month.

EGG CANDLER.

Must have had several years' experience in egg candling. \$125 a month.

ELECTRICIAN.

See Lineman and Wireman.

SCHEDULE OF POSITIONS AND PAY IN THE DREDGING WORK OF THE PANAMA CANAL.

Maximum monthly rates are shown in the following table, on nonsubsistence basis. Subsistence is furnished on practically all vessels in the dredging service of the Panama Canal, although for record and accounting convenience nonsubsistence base rates are quoted below. Deduction of \$20 per month from rates given in table will be made to cover subsistence charge.

Entrance salaries (tugboat and self-propelling barge service).—Entrance salaries for positions on tugs (large and small) and self-propelling barges (classes 6 and 7) are \$10 less than rates on schedule, increasing to maximum after six months' satisfactory service.

Entrance rates for relief mates and engineers (positions which are not assigned to any particular piece of equipment) are also \$10 less than rates shown on schedule for mates and assistant engineers on self-propelling barges. After six months' satisfactory service the maximum rate indicated on schedule is paid. Promotions are made from this list to regular assignments on tugboats, with corresponding increase in salary.

Positions of a higher grade are filled by promotion from lower grades.

All applicants for deck and engine room positions, Panama Canal Service, listed on following schedule, must forward United States license with applications, except positions under classes 3 (15-yard dipper dredges), 4 (pipe-line suction dredges), and 10 (drill barge).

Class.	Vessels included.	Master.	Mate.	Mate.	Chief engineer.	Engineer.	Engineer.	Operator.	Operator.
1	Seagoing suction dredges.....	\$246.50	\$168	\$151	\$227.50	\$181	\$169	.....	.....
2	Ladder or elevator dredges, large.....	225.00	200	190	225.00	200	190	.....	.....
3	Dipper dredges, 15-yard.....	235.00	200	200	230.00	185	185	\$225	\$225
4	Pipe-line suction dredges.....	220.00	195	155	195.00	155	145	170	155
5	Ladder or elevator dredges, small.....	190.00	180	180	180.00	180	180	.....	.....
6	Tugs, large.....	1 200.00	1 190	1 190	1 190.00	1 185	1 185	.....	.....
7	Tugs, small; self-propelling barges.....	1 175.00	1 160	1 160	1 170.00	1 160	1 160	.....	.....
8	Launches, steam.....	100.00	100	.....	100.00	100	.....	.....	.....
9	Floating cranes.....	2 245.00	191	.....	195.00	185	120	.....	.....
10	Drill barge.....	205.00	180	.....	.....	.....	.....	.....	.....

¹ See note above regarding entrance salaries.

² Joint master of craneboat La Valley and floating cranes Ajax and Hercules.

ELECTROPLATER.

Must have had at least three years' experience as electroplater in copper, nickel, and silver. Must be thoroughly familiar with mixtures and processes used, and must be competent to supervise buffers, polishers, and burnishers, in which trades he must also be proficient. 68 cents an hour.

EMBALMER-CREMATOR.

Must have State license as embalmer, and must have had at least one year's experience in crematory. \$100 and \$125 a month.

ENGINEER.

Dredge.—See Dredging positions.

Locomotive.—\$150 a month in yard or switch service. Promotion to \$225 a month when assigned to main-line service. Hostlers given preference for promotion to grade of locomotive engineer.

Marine.—See Dredging positions.

Refrigerating.—Must have had at least five years' experience in ice making and around either steam-driven or motor-driven refrigerating machinery in large refrigerating plants. One who has mechanical ability to make emergency repairs preferable. State whether steam-driven or motor-driven experience. \$175 a month.

Steam.—The rating "steam engineer" covers locomotive-crane engineer, compressor engineer, dynamo engineer, hoisting engineer, Lidgerwood engineer, operator of clamshell or orange-peel dredge, pile-driver engineer, pumpman, road-roller engineer, stationary engineer, and track-shifting engineer. Persons applying should indicate for which of the above classifications they consider themselves best qualified by their experience. If they hold an American license the same or a certified copy thereof should be submitted with the application and will be returned immediately. 50 to 56 cents an hour; \$100 to \$150 a month.

Steam shovel.—Should be familiar with and experienced in handling Bucyrus and Marion shovels. \$218 a month.

FILTER.

See Operator.

FIREMAN (FIRE DEPARTMENT).

All appointees to this position must be *single* white men, between the ages of 20 and 40 years, not less than 5 feet 7 inches nor more than 6 feet 2 inches in height, weighing not less than 140 pounds nor more than 210 pounds, with a chest measurement of not less than 35 inches (measurements and weight without clothing), and be in good health and sound in body. Must have had at least two years' experience in a paid fire department in a city of not less than 30,000 inhabitants, and have rendered satisfactory service. Applicants must furnish satisfactory references as to sobriety, moral character, and experience from the chief, assistant chief, or other superior officer of the department in which the applicant has served. All appointees must furnish their own uniforms, which should be secured on the Isthmus, and in addition thereto they must provide themselves with a pair of fireman's rubber boots, a pair of mittens, a Globe service coat or equivalent, and a pair of suitable fire-service trousers with ring and snap. They must agree to serve one year with the fire force on the Isthmus. The salaries of firemen are \$100 and \$112.50 a month, lieutenants \$125, and captains \$145 a month. The positions of lieutenant and captain are filled by promotion of firemen. (See also Operators, Fire apparatus (motor).)

FLANGE TURNER.

Must be thoroughly competent to lay out and flange plates of all thicknesses for boiler and ship work. 71 cents an hour.

FOREMAN.

Laundry.—This includes the several branches of large steam laundry work: washers, sorters, and markers, ironers, etc. The special qualifications required will be stated in requisitions. Must be competent to supervise and instruct colored help. \$100 to \$125 a month.

Slaughterhouse.—Must be competent to supervise the slaughtering of cattle, actually perform the work connected therewith, and of sufficient training and experience to train inexperienced colored men in the performance of the various duties connected with the work. \$150 to \$175 a month.

Slaughterhouse.—Must be competent to take charge of offal disposition of slaughterhouse. Special experience in utilizing waste products and ability to instruct others is essential. \$125 a month.

HELPERS.

Must present evidence of actual employment with mechanics of some trade for at least one year, and must have sufficient knowledge of a trade to demonstrate clearly their superiority to unskilled labor for assisting mechanics. In making application, statement of experience must be given, and employment will depend on character of experience. Very few helpers will be sent to the Isthmus from the United States. 40 cents an hour.

HOSTLER.

Must have had experience as a locomotive engineer or not less than two years as a fireman, and must be competent to move engines under steam about shops, yards, etc. Hostlers are considered in the line of promotion to locomotive engineers. \$137.50 a month.

HYDROGRAPHER.

Graduate civil engineer, between the ages of 20 and 30 years, who has either specialized in college on hydraulic engineering or who has had at least one year's practical experience in hydrographic work since graduation. Entrance salary, \$100 a month.

ICE CREAM MAKER.

Must have at least three or four years' experience in the manufacture of ice cream and water ices. Experience with large ice cream factories preferred. This section is also in charge of the bottling of milk and cream. Must supervise and instruct colored help. \$125 to \$137.50 a month.

INSPECTOR.

Merchandise.—Must have thorough knowledge of general dry goods, men's and ladies' furnishings and notions. Should have knowledge of window displaying. Several years' experience in large wholesale dry goods establishments is essential. Should be able to instruct other employees in the care and displaying of the above-mentioned supplies. \$150 to \$175 a month.

Provision.—Must be a practical "provision" man, able to handle meats, fruits, and vegetables, with special experience in cutting meats and in selling cold-storage products. Familiarity with grocery products is essential. Will be used for service in inspecting provisions and in training sales force of cold-storage and grocery departments of retail commissaries. \$150 to \$175 a month.

INTERNE.

Must be single, a graduate within a year of a recognized medical school, recommended by the faculty of the school; age limits 22 to 30 years. They will receive no compensation other than free quarters, board, laundry, and free transportation to and from the Isthmus; will have status of an employee with leave privileges, and in addition free transportation to and from the Isthmus when taking authorized leave. This position is not subject to civil-service examination.

IRON WORKER.

This designation includes bolters-on, angle-iron smiths, erectors, snappers, and rivet heaters. Persons applying should indicate for which of these classifications they consider themselves best qualified by their experience. This rating is for dock building and tank building outside of shops. 56 to 75 cents an hour.

LABORATORY ASSISTANT.

Entrance salary, \$90 a month. May be promoted after six months' satisfactory service to \$105 a month.

LATHER (METAL).

75 cents an hour.

LAUNDRYMAN.

See Foreman; also Superintendent.

LEVELMAN.

Must be graduate civil engineer or have had at least two years' field experience and be between the ages of 20 and 40 years. \$100 and \$125 a month. This position is usually filled by the promotion of rodmen.

LEVERMAN (OPERATOR).

Pipe-line dredge.—See Dredging positions.

LINEMAN.

Light and power pole line work.—Must be accustomed to stringing both heavy and light wire, hanging and connecting up transformers, and able to work on live wire in 2,300-volt circuits. Must furnish tools. 69 cents an hour.

High-tension transmission line.—Men who have had experience in lines of 50,000 volts or over preferred. Must be capable of erecting towers, stringing wires, placing insulators, etc. Must furnish tools. \$156 a month.

MACHINIST.

In applying for any of the following classifications of the position of machinist the applicant should bring out clearly in his application any experience which he may have had on marine equipment.

Air brake.—Machinists under this heading will generally be rated as machinists (floor and bench). Special experience in repair of locomotive air and driver brakes and car air-brake equipment should be stated in the application. 66 cents an hour.

Brass lathe.—This work will generally be performed by men rated as machinists (machine) at rates determined by their efficiency. Special experience in this line should be stated in the application.

Electrical.—64 cents an hour.

Floor and bench.—Must be capable of work on the floor or on the bench; experienced in all classes of general repair work on steam engines, pumps, locomotives, or other machinery in so far as bench and floor work is concerned; must be able to use a micrometer and to work from blue print; must have served an apprenticeship in a good shop. 66 cents an hour.

General.—This word will be used in connection with the name of some branch of the machinist's trade to indicate general experience in that particular branch. As, for instance, "machinist, general, with marine experience," would mean a machinist who has had experience in floor and bench work, machine work, erecting work, and lining up and installation of machinery on board ships. 66 cents an hour.

Machine.—Must be capable of doing all kinds of machinist's work on lathes, planers, boring mills, shapers, and other types of machines found in locomotive and marine

shops; must be capable of using micrometer gauges and be able to work from blue print. Special experience along these lines should be stated in the application. 66 cents an hour.

Marine.—Must be experienced in erecting and repairing marine engines, including turbines; must be competent to align shafts and bearings and to do other erecting work on marine equipment. Men employed on this work will be rated according to the particular class of work for which employed, but in making selection only men able to show experience on marine work will be chosen. 66 cents an hour.

Toolmaker.—Must be capable of working on bench and machines; must have had extended experience in tool-making work, including the making of taps, dies, reamers, and other small tools, and must be able to care intelligently for same. Also competent in making jigs. 66 cents an hour. Will be carried under general heading of machinist.

Turret-lathe operator.—Must have had at least two years' experience within the last four years operating modern turret lathes. Men for this work will be rated as machinists (machine) at rates determined by their efficiency.

MASTER (MARINE).

See Dredging positions.

MATE.

See Dredging positions.

MOLDER.

Iron.—Must have had experience in marine and general jobbing foundry. Must be capable of working in both green and dry sand, and must be accustomed to doing side, floor, and crane work. No bench molder will fill this specification.

Brass.—Must have had at least four years' experience on marine work and steam and water tight fittings.

Steel.—Must fill all requirements for an iron molder, and in addition must be experienced in the making of both dry and green sand molds for steel castings. Must be capable of doing crane work.

The rating molder will cover all branches of the trade, including coremaker, but employment will be based on the special experience of the applicant in the branch for which men are wanted. 68 cents an hour.

NURSE.

Male and female.—Applicants must be between the ages of 20 and 40 years, graduates of schools for trained nurses having at least a two years' course, and have had at least one year's subsequent experience in a modern and well-equipped hospital; or, in the case of male nurses, having served at least one enlistment in the Hospital Corps of the United States Army or Navy. The entrance salary for female nurses is \$65 a month, with subsistence and laundry of uniforms, with promotion of \$5 a month for each two years' satisfactory service until a maximum of \$85 a month is reached. Male nurses will be appointed at \$90 a month, without subsistence or laundry, and may be promoted \$5 a month at the end of each two years' satisfactory service until a maximum of \$125 a month is reached. Only single men are desired for the position of male nurse. This position is subject to civil-service examination. See section 2.

OBSERVER.

Man who has had two years' experience in meteorological work and is familiar with the observations made and instruments used at "first-class" United States Weather Bureau stations. Entrance salary, \$100 a month.

OPERATOR.

Brown hoist.—\$175 a month.

Dipper dredge.—See Dredging positions.

Electric crane.—\$125 to \$150 a month, with certain exceptions.

Electric switchboard.—\$125 to \$150 a month.

Filter.—Must have equivalent of high-school education. Required to read the meters, keep notes, and make calculations. For work at water-purification plants. \$100 and \$125 a month.

Fire apparatus (motor).—All appointees to this position must be *single* white men between the ages of 20 and 40 years, not less than 5 feet 7 inches nor more than 6 feet 2 inches in height, weighing not less than 140 pounds nor more than 210 pounds, with a chest measurement of not less than 35 inches (measurements and weights without clothing), and be in good health and sound in body. Must have had at least two years' experience as first driver in charge of a motor pumping engine in a paid fire department and have received the compensation attached to that position. Applicants must furnish satisfactory references as to sobriety, moral character, and experience from the chief, assistant chief, or other superior officer of the department in which the applicant has served. Appointees are required to furnish their own uniforms, which should be secured on the Isthmus. They must agree to serve one year with the fire force on the Isthmus. After arrival on the Isthmus appointees will be required to pass an examination before the board of local inspectors and demonstrate their ability to operate automobile fire apparatus. This position is generally filled by promotion of qualified firemen. \$120 a month.

Sand blast.—Must have had at least one year's experience in the operation of sand blast for cleaning castings, etc., in the foundry, or for cleaning scale from metal work, or both. 52 cents an hour.

Suction dredge.—See Dredging positions.

Telephone switchboard, female.—Applicants must be between the ages of 18 and 26 years and must have had at least two years' experience in operating common battery subscribers' boards. \$50 to \$75 a month.

Towing locomotive.—This position filled by operating force in addition to other duties. \$150 a month.

PAINTER.

House.—Must be a good brush man who can mix ordinary colors. Preference will be given to men experienced in handling gangs. Experience must cover all the work usually performed in houses.

Car.—Must be experienced in striping, varnishing, and finishing locomotive and coach work, in addition to straight painting, and must have had at least three years' service in either railway or car shops.

Ship.—Must have had at least two years' experience in a shipyard and be capable of performing all painting, glossing, etc., required on shipboard.

The foregoing will be rated as painters. 60 cents an hour.

Letterer and grainer.—Must be competent to do all kinds of lettering and graining, including gold, silver, and bronze leaf work, except high-grade free-hand sign painting. Must be capable of laying off stencils for letters. 70 cents an hour.

Sign.—Must be capable of performing all the work required of letterer and grainer, and in addition must be capable of doing the highest class free-hand lettering and sign painting. 81 cents an hour.

PATTERN MAKER.

Must have had four years' experience as a journeyman pattern maker and must be capable of making light and heavy patterns for marine, locomotive, and general jobbing work, including gearing. 75 cents per hour.

PHYSICIAN.

Must be single and graduate of recognized medical school. Age limits, 22 to 30 years. Entrance salary, \$150 a month. This position is subject to civil-service examination. See section 2; also Interne.

PILOT.

Must hold a master's certificate for unlimited tonnage on seagoing or Great Lakes steamers and be experienced in handling them around wharves or through locks; also be proficient in navigation pertaining to pilotage, especially so in all matters relating to the compass. Must be temperate, physically sound, temperamentally suitable, under 45 years, and preferably not over 35. May be required to act as master of tugboat, pending assignment as regular pilot. Entrance salary, \$200 a month. Increase of \$25 each six months until maximum of \$250 a month is reached, contingent upon satisfactory service. Preference will be given to persons employed on floating equipment of the Panama Canal.

PIPE FITTER.

Must be experienced and capable of handling, working, and bending all kinds of wrought-iron pipe, from smallest size to 10 inches in diameter, and experienced in locomotive and car steam and air piping. 65 cents an hour.

PLANING-MILL HAND.

Must have had four years' experience as journeyman mill hand and capable of running heavy woodworking machinery, such as planers, surfacers, matchers, rip and cut off saws, mortising and boring machines on general milling work. 56 cents an hour.

PLASTERER.

Must be thoroughly experienced in both plain and ornamental work. 78 cents an hour.

PLUMBER.

Must be qualified to install house or ship plumbing in all its branches, including brass and nickel work and leadwork; must be able to wipe joints and to line up piping and fittings. Must have had at least four years' experience as a journeyman. Construction work, 78 cents an hour. Maintenance work, \$143 a month.

POLICEMAN.

First class.—White man, *single*, between the ages of 21 and 40 years, at least 5 feet 8 inches in height, with a minimum weight of 140 pounds (measurement and weight without clothing); sound physique and clear intellect, good moral character and correct habits, and be able to read and write the English language. A knowledge of Spanish is desirable, and also an excellent discharge from the United States Army, Navy, or Marine Corps, or record of satisfactory experience in police work. All appointees to this position are required to furnish their own uniforms, which should be secured in Panama. They must agree to serve one year with the police force on the Isthmus. Salaries \$93, \$112.50, and \$125 a month. Initial appointments are usually made at the \$93 rate. Promotions to the rank of sergeant, lieutenant, and captain are made from the ranks. Sergeants are paid \$130, lieutenants \$140, and captains \$160 a month.

QUARANTINE GUARD.

Single men, with at least a common-school education; knowledge of ships necessary; previous experience as seaman desirable. Preference given to exnoncommissioned

officers and other enlisted men with excellent discharges from the United States Army or Navy. The physical requirements for this position are the same as for the position of policeman. Entrance salary, \$100 a month.

RIGGER.

Weight handling.—Must have had experience of at least two years in handling weights; must know how to pass straps for safe handling of weights, have a good idea of size of straps and number and character of turns for different kinds of weights, and must be competent to supervise a gang of laborers. 64 cents an hour.

Rigging fitters.—Riggers for work on fitting rigging must be competent to splice wire, hemp, and manila rope with all styles of splicing, to make eyes and seizings, and to worm, parcel, and serve rigging, and to fit and set up the same on ships. 64 cents an hour.

RIVETER.

Should be capable of driving rivets both by hand and pneumatic hammer for watertight and oil-tight work on hulls and tanks. 63 cents an hour.

RODMAN.

An active young man, between 20 and 30 years of age, with about one year's experience in the field and possessing the equivalent of a high-school education, or graduate of a technical school in the civil-engineering course. \$83.33 a month.

SANITARY INSPECTOR.

Applicants must preferably be graduates of technical schools in civil or sanitary engineering, preference to be given to those who have had experience under tropical conditions. Applications should be addressed to the "Chief Health Officer, Balboa Heights, Canal Zone." Entrance salary, \$125 a month.

SAUSAGE MAKER.

Must have at least five years' experience with large sausage-making establishments. Must be familiar with all details of sausage making and be competent to instruct others. \$125 to \$150 a month.

SCHOOL-TEACHER.

Grade teachers must have completed a regular four-year high-school or academy course, and must have had at least two years' training in a standard normal school or college, and at least two years' successful experience in the public schools of the United States. In place of the two years' normal school or college training required for grade positions, high-school teachers must have had four years' college or university training. Applications should be addressed to the "Superintendent of Schools, Balboa Heights, Canal Zone," who will furnish all information. Appointments are made for the school year of nine months, beginning October 1. Entrance salaries: Grade teachers, \$95 a month; high-school teachers, \$120 a month. All teachers receive an increase of \$5 a month each year for three years, contingent upon satisfactory service. Sick leave up to 24 days in the school year, when sickness is certified to by a Government physician, is allowed. No "annual," "cumulative," or "travel" leave is granted to teachers. Married women are not eligible to this position.

SHEET-METAL WORKER.

Must be capable of working all classes of sheet metal less than one-eighth inch in thickness, including galvanized iron, tin, and sheet copper and installing copper

flashing. Must be able to lay out and construct cornices, ventilators, skylights, piping, and elbows, etc., and make tanks and containers for liquids. 69 cents an hour.

SHIP FITTER.

Must be capable of laying out and doing all kinds of ironwork on hulls, decks, bulkheads, and water-tight compartments, and of laying out and doing all kinds of sheet-iron work usually found in a shipyard. 65 cents an hour.

SHIP JOINER.

Must be capable of doing all kinds of joiner work on steamboats of any description. 66 cents an hour.

SHIPWRIGHT.

Must be capable of doing all shipwright or ship carpenter's work, including laying off and shaping frames and planking, construction of small boats, fastenings, scarfing, beveling, etc. 66 cents an hour.

STENOGRAPHER.

See Clerk.

STEVEDORE.

He should hold a second mate's certificate, have a good all-round knowledge of a ship, such as reeving off necessary gear, getting derricks, etc., placed in order, rigging up purchases for taking out or putting in heavy weights, know what working strain the different purchases, gear, chain, wire slings, and lashings will stand; how to load a ship with regard to different commodities stowed together, placing of dunnage, stability of vessel, draft, etc. Should be able to stow ship when same is loaded for several ports so that when ship leaves one port for another she will be evenly trimmed, stand upright, with cargo secure; know how to stow cargoes so as to comply with all underwriters and boards of trade rules; measure off hold space, give correct account of how much cargo vessel can take, either when empty or partially loaded, to complete. \$100 to \$150 a month.

STEWARD.

Man with experience in American-plan hotels, both as steward and clerk. Must be able to keep simple accounts and have sufficient knowledge of cooking to be able to actually do the cooking if cook should quit. \$83.33 and \$100 a month, including subsistence.

SUPERINTENDENT.

Bakery.—Must have had several years' experience in charge of large bakeries. Competent to supervise white and colored labor in the manufacture of bread and all kinds of cake and pastry. \$175 to \$200 a month.

Cold-storage plant.—Must have had at least five years' experience in handling meats and provisions in refrigeration and be competent to handle skilled and unskilled white and colored labor. A man with some packing-house experience is preferred. \$175 to \$200 a month.

Laundry.—Must be thoroughly experienced in all lines of steam laundry work and have been in entire charge of large laundries. Several years' experience in rush steamship, hotel, and personal laundry work is essential. \$175 to \$200 a month.

TELEGRAPH OPERATOR.

Capable railroad operator with clerical experience. Entrance salary \$100 a month.

TICKET COLLECTOR.

Must have a general knowledge of the handling of railroad passenger transportation forms, preferably one who has had at least one year's experience as ticket agent or ticket collector in railroad service. \$125 to \$150 a month.

TYPESETTER.

77 cents an hour.

TIMEKEEPER.

Rated as clerk. See requirements under heading of Clerk.

TINSMITH.

See Sheet-metal worker.

TOOLMAKER.

See Machinist, toolmaker.

TRACER.

The principal requisites of this position are ability to use drawing instruments with precision and neatness, together with a neat style of lettering. The applicant need have no designing ability, but should be able to take any pencil sketch and make a workmanlike drawing. Tracers are expected to furnish their own drawing instruments. \$60 to \$75 a month.

TRACK FOREMAN.

Must be experienced in laying and surfacing new track and capable of installing and maintaining switches. Must know all details of this work and be able to instruct personally the laborers how to do the work as well as manage them. No foreman who has only had experience on maintenance of way and without construction experience in marshy country wanted. One preferred who is experienced on both maintenance and construction. \$100 to \$150 a month.

TRANSITMAN.

Same as levelman, but must have had a large amount of practical experience. This position is usually filled by promotion. \$150 a month.

TYPEWRITER AND ADDING-MACHINE REPAIR MAN.

One experienced in repairing different makes of adding machines and typewriters, including the Underwood machine. Must furnish all the tools necessary in this work. \$100 to \$150 a month.

WELDER.

Acetylene.—Must have had at least two years' experience with acetylene torches; must be capable of doing all classes of cutting and welding, including welding castings and light plates. 63 cents an hour.

Electric.—Must have had at least two years' experience at electric welding with the carbon-arc type of apparatus and must be proficient in welding castings and plates. 63 cents an hour.

WIREMAN.

Under general rating of "Wireman" appointments will be made for specific purposes, as indicated by subratings. When a particular class of work is not available, wiremen will be expected to perform work required in any or all of the subratings to the best of their ability. All wiremen must furnish tools. (See sec. 13.) 69 cents an hour.

Armature winder.—Experienced in repair shop work and repairs of all classes of electrical apparatus and machinery. Must be capable of winding, taping, and impregnating of motor, transformer, and magnet coils, rewinding and connecting both A. C. and D. C. motors, and shop repairs. 69 cents an hour.

Cable splicer.—Experienced in and capable of making splices in single and multiple conductor lead-covered cables. Should have had experience in installing underground transmission systems of potentials from 2,300 volts up. Must be careful and able to make the joint complete, including wiping on and sealing of sleeve.

Cable splicer, telephone.—Must be experienced in and competent to make splices on telephone cable of all capacities up to 300 pairs. Must have had at least two years' experience with some reputable company. 69 cents an hour, and \$150 a month.

Electric.—One who is experienced and capable of doing open and concealed wiring and molding work for electric lighting. He must be thoroughly familiar with the National Electrical Code, as comprised in the Regulations of the National Board of Fire Underwriters for Electric Wiring and Apparatus. Conduit wiremen must also have had two years' experience in fitting electric conduit and wiring therein.

Motor and control.—Men for this class of work should be experienced in setting of control or contactor panels, including all connections between the motor and feeder system and between the motor and control panel. Experience with the installation of electrical equipment in steel mills, cotton mills, large shops, or similar institutions will be given preference. Most of the equipment consists of three-phase motors and alternating-current control equipment, although there is some direct-current control equipment, but men having had direct-current experience only will not be suitable.

Station and switchboard.—Must be experienced in hydroelectric station, switchboards, and transformer-room equipment. Experience with construction departments of the large public-service electrical companies or as erectors or construction men for the large electrical manufacturing companies preferred. Experience only on low-tension switchboards will not qualify for control and switchboard work; experience with remote control apparatus also required.

Telephone wireman or inspector.—Must be experienced in common battery exchange equipment and must have had at least two years' experience in installation of telephone switchboards, storage batteries, subscribers' equipment, etc. \$125 to \$162.50 a month.

Transformer and oil switch.—Men who have had experience in insulating bus bars, making up high-tension terminal bells and joints, assembling and erecting oil switches and transformers for both light and power service. They should also be familiar with the installation of potential and current transformers and incidental wiring for metering the current. Experience with large public-service electrical companies which maintain their own construction departments is desirable for this class of work. Also experience with large electrical manufacturing concerns may be suitable, depending upon the detail of the experience. Outside overhead linemen with outdoor transformer experience are not desired on account of the wide difference in the class of transformer work to be done on the Isthmus. Experience with 4,500 volts up is preferred.

YARDMASTER.

Filled by promotion of conductors. \$150 to \$210 a month.

TOOL LIST.

Sec. 13. All mechanics should take with them to the Isthmus the tools of their trade that it is customary for them to carry with them in the States. Tools can not be bought to advantage on the Isthmus. The following list of tools needed in certain crafts is given merely as a guide to new employees of what is expected in this line.

It will be understood, however, that mechanics in other crafts will be required to provide themselves with appropriate tools:

Blacksmiths.—Calipers, rule, dividers, square.

Boiler makers.—Steel rule, dividers, calipers, square, spud wrenches, chipping hammers.

Cabinetmakers.—Same as carpenters, with addition of one set of hand-carving tools.

Calkers, wood.—Calking mallet, a complete set of calking tools, stool.

Carpenters.—Cross-cut saw, rip saw, compass saw, tenon saw, drawknife, spoke shave, scraper, ratchet brace, extension bit, set of auger bits, spiral screw driver, set of standard drills and stock, jack plane, smooth plane, fore plane, adz, claw hammer, hatchet, steel square, small square, 2-foot rule, try-square, set of chisels, set of gouges, mallet, pair of compasses, level, oilstone, 6 and 12 inch ordinary screw drivers, block plane, countersink and screw-driver bits for brace, marking gauge.

Car repairers and inspectors.—Claw hammer, hatchet or small hand ax, oilstone, 2 handsaws (cross cut), 2-foot steel square, try-square, bevel square, smoothing plane, jack plane, set of chisels $\frac{1}{2}$ to 2 inches, brace not less than 12-inch sweep, set of three different sized screw-driver bits for brace, set of ship auger bits from $\frac{1}{8}$ to $1\frac{1}{8}$ inch, set of gimlet or drill bits No. 1 to No. 8, 2-foot rule, mallet.

Coppersmiths.—B. P. hammer, set of chisels, set of solid punches, pair of 10-inch dividers, circular snips No. 8, straight snips No. 7, pocketknife, set of beating hammers, 24-inch steel rule, center punch.

Core makers.—Trowel, lifter, double ender, set slickers.

Draftsmen.—One set of drawing instruments, T square, bevel square, splines, curves.

Erectors.—One pair each of 8-inch inside and outside calipers, one pair 8-inch dividers, 3-foot steel rule, combination set with 24-inch steel rule, 6-inch steel scale, one set trammel points.

Instrument makers.—Same as typewriter repair men, and in addition special tools for watchmaking.

Ironworkers.—Same as ship fitters.

Joiners.—Same as carpenters.

Linemen.—Tool bag, belt, ratchet brace, 2-inch wood chisel "firmer socket," Haven clamp, pair of climbers, claw hammer, pair of 8-inch side cutting pliers, 6-foot rule, hand cross-cut saw, 6 and 10 inch screw drivers, safety strap, tool (Howe's) or jack strap, lag screw wrench, monkey wrench, hacksaw frame, B. P. hammer, carpeater's square, pocketknife.

Locksmiths.—Same as instrument makers, except tools for typewriter repairs, and include special tools for locksmith work.

Machinists.—One each of the following: 3, 6, and 12 inch scales, 1 pair each inside and outside calipers (6 and 12 inch), pair 6-inch dividers, center gauge, surface gauge, depth gauge, scratch gauge, thickness gauge, USS thread gauge, toolbox, box square, 12-inch square and bevel protractor, 8-inch hermaphrodite, screw driver, plumb bob, 6-inch flexible steel rule, pair extension trams, B. P. hammer, 12-inch monkey wrench, combination square, 2 or 3 inch outside micrometer, 12-inch inside micrometer, spirit level, 2-foot rule, center punch.

Millwrights.—Box square, B. P. hammer, brace and set of bits, plumb bob, chalk line, handsaw (cross cut), 24-inch spirit level, 2-foot square, pair 12-inch dividers, carpenter's claw hammer, 6-foot folding rule, 50-foot steel tape, 6-inch scale, set of inside calipers, set of outside calipers, 8-inch hermaphrodite, scrapers, 6, 10, and 14 inch monkey wrenches.

Molders.—Trowels, flange tools, lifters of all sizes, pipe slickers, double enders, half-round corners, inside square corners, hub tool, bead tool, hammer, 2-foot rule, square corners.

Pattern makers.—No. 7 or No. 8 jointer, jack plane, block plane, set of paring chisels, set of paring gouges, set of Adis carving gouges, router with set bits, rabbet plane, sole plane with set bits, handsaw, tenon saw, compass saw, pair pliers, combination try-square with center head, 4-inch try-square, 4 and 12 inch combination squares, 24-inch framing square, 14-inch try-square, set of nail sets, set of oilstones, set of calipers, set of turning tools, set of shrink rules ($\frac{3}{16}$, $\frac{1}{8}$, and $\frac{1}{16}$ inch shrink per foot), set Russell Jennings bits, set brace screw-driver bits, brace, hand screw driver, 10-inch bevel square, set spoke shaves for curved and straight work, set of dividers, pair trammels, 2 scratch gauges (large and small), claw hammer, and one upholsterer's

hammer, set round-bottom planes, 2-foot rule, set firmer chisels, expansion bit, set twist drills and brace.

Pipe fitters.—Pair 10-inch dividers, 6-foot rule, pair 6-inch gas pliers, 50-foot steel tape, 6, 8, and 10 inch Stillson wrenches.

Plumbers.—Hammer, screw driver, pair cutting pliers, compass saw, set brace, bits and drills, wood chisel and gouge, $\frac{1}{2}$ and 2 inch bending springs, turnpin, compasses shave hook, bending irons, calking irons, soldering irons, cold chisel, joint runner, file, brass pipe wrench, 10 and 14 inch Stillson wrenches, 12-inch monkey wrench, $\frac{1}{2}$ and 2 inch drift plugs, ladle, wiping cloths, rasp, tap borer, 6-foot rule, basin wrench, hack saw, 8-inch Stillson wrench.

Sheet-metal workers.—Circular snips No. 8, straight snips No. 7, pair 10-inch dividers, pair 6-inch wire pliers, one small and one large tinner's hammer, Nos. 4 and 7 rivet sets, 50-foot steel tape, center punch, 6-foot rule, mallet, center punch, soldering irons, scratch awl, monkey wrench, breast drill and bits.

Ship fitters.—Two-foot rule, chalk line and reel, center punch, B. P. hammer, square, dividers, spud wrenches.

Ship joiners.—Screw driver (6-inch), screw driver (12-inch), screw-driver bit, adz, smooth plane, joiner plane, jack plane, spokeshave, 2-foot rule, set of gouges, set of wood chisels, bevel, set wood bits, hand drill and bits, ratchet brace, 24-inch carpenter's square, oilstone, try-square, marking gauge, claw hammer, hatchet, draw-knife, handsaws, pair dividers, chalk line, mallet, spirit level, calipers, monkey wrench, angle brace, block plane, 50-foot steel tape.

Shipwrights.—Broadax, screw drivers (6 and 12 inch), adz, spike maul, screw-driver bit, set of wood bits, set of wood chisels, set of gouges, ratchet brace, 24-inch carpenter's square, bevel, oilstone, race knife, try-square, smoothing plane, jack plane, marking gauge, claw hammer, light riveting hammer, 2-foot rule, 50-foot steel tape, pair dividers, spokeshave, cold chisels, saws (cut-off and rip), spirit level, chalk line and reel, fore plane, calipers, expansion bit, plumb bob, angle brace.

Toolmakers.—Three-fourths-pound B. P. hammer, 1-inch micrometer, 2-inch micrometer, 3-inch micrometer, inside micrometer, 4, 6, 10 inch inside calipers, 4, 6, 10 inch outside calipers, surface gauge, USS screw pitch gauge, universal bevel protractor, 4, 6, 12, 18 inch steel rules, 6-inch flexible steel rule, 6-inch narrow hook rule, center punch, 3-inch dividers, 6-inch dividers, 4-inch hermaphrodite caliper, 5-inch inside-thread caliper, 5-inch outside-thread caliper, 60° center gauge, depth gauge, 6-inch solid steel square, test indicator, 3-inch screw driver, 6-inch screw driver, oilstone, thickness gauge, magnifying glass, scriber, straightedge (4 to 12 inch), feelers, 2-foot rule, surface gauge, tool gauge, thread gauge.

Typewriter repair men.—Twelve-inch screw driver, 7-inch ($\frac{3}{8}$ -inch bit) screw driver, 6 $\frac{1}{2}$ -inch Champion screw driver, 6-inch ($\frac{3}{8}$ -inch bit) Champion screw driver, small steel hammer, small copper hammer, pair Starett's pliers (for music wire), pair 3-prong pliers, pair flat-nose pliers (4 $\frac{1}{2}$ -inch), pair round-nose pliers, pair parallel pliers (4 $\frac{1}{2}$ -inch), pair parallel pliers (6-inch), pair side-aligning pliers for Underwood typewriter, pair ring-detaching pliers for Underwood typewriter, pair of tweezers, typewriter twister for Underwood typewriter, shift-rail twister for Underwood typewriter, aligning wrench for Underwood typewriter, trip wrench for Underwood typewriter, hexagon nut wrench for Underwood typewriter, soldering gauge, alcohol torch, oilstone.

Wiremen.—Tool bag, set of wood bits, ratchet brace, soldering copper (2 pounds), claw hammer, pair gas pliers, 2 pairs side-cutting pliers (6 and 8 inch), 6-foot rule, 3 screw drivers (3, 6, and 10 inch), blow torch, 8-inch monkey wrench, cable knife, 14-inch pipe wrench.

Wiremen (telephone).—Tool bag, set of wood bits, ratchet brace, soldering copper, claw hammer, one pair pliers (S. C. 6-inch), one pair diagonal pliers (4-inch), 2 screw drivers (3 and 6 inch), blow torch.

Cable splicers (telephone).—Cable splitter, cable stripper, turning pin, one pair pliers (6-inch), soldering copper, blow torch, shave hook, boxwood dresser, bossing stick, wiping cloth, melting pot, ladle.

GENERAL CONDITIONS OF EMPLOYMENT.

Sec. 14. The following Executive order was issued on February 2, 1914, providing conditions of employment for the permanent force for The Panama Canal:

By virtue of the authority vested in me by law it is hereby ordered that the general conditions of employment governing employees on the Isthmus of Panama necessary for the completion, care, management, maintenance, sanitation, government, and operation of The Panama Canal, the Canal Zone, the Panama Railroad, and other adjuncts, shall be as follows:

APPOINTMENT AND COMPENSATION.

1. The salaries or compensation of employees shall in no instance exceed by more than 25 per cent the salaries or compensation paid for the same or similar services to persons employed by the Government in Continental United States, as determined by the governor of The Panama Canal. (See note below.)

2. Service must be satisfactory to the head of the department in which employed, and employees are subject to the regulations of the governor.

3. The compensation and conditions of employment of persons employed in the United States will be specified in provisional appointments. The compensation of such persons will begin upon date of embarkation at port of departure from the United States, and they will be granted free transportation from port of departure, including meals on the steamer, but no compensation or expenses for the journey to the port; but former employees from the United States whose next preceding service with The Panama Canal was less than one year shall be paid only from date of entry into service on the Isthmus, and will be allowed only such reduced rates of transportation to the Isthmus as may be available for Government employees. Employees appointed at an hourly rate will be paid for the period of transit to the Isthmus on the basis of an eight-hour day, exclusive of Sundays. Except in case of discharge or other separation from the service beyond the employee's control, payment of salary from date of embarkation to date of arrival on the Isthmus will not be made unless service on the Isthmus continues for 30 days.

4. All officers and employees in the service of The Panama Canal, except those who are to perform the duties of clerk, bookkeeper, stenographer, typewriter, surgeon, physician, trained nurse, or draftsman, shall be exempted from examination under civil-service rules, and appointments to clerical positions on the Isthmus of Panama paying \$75 per month or less may also be made without examination. Officers and employees now in the service of the Panama Railroad Co. on the Isthmus may be transferred to and retained in the service of The Panama Canal without examination, whenever any work now performed independently by the Panama Railroad is consolidated with similar work performed by The Panama Canal.

5. When employees in the present organization are transferred to the permanent organization, they shall retain their seniority as regards questions of civil service, quarters, and other privileges or considerations: *Provided, however*, That the seniority granted to employees by this order shall not be operative in any case so as to form any claim involving the payment of funds of the United States.

6. All employees who receive over \$75 per month or over 40 cents per hour must be citizens of the United States or the Republic of Panama, and such citizens will be given preference for employment in all grades. Aliens may not be employed in such grades unless (a) they have occupied similar positions during the construction of the canal for two years or more, or (b) in case of emergency, in which latter case they must be replaced by citizens of the United States or Republic of Panama as early as practicable.

7. The Governor shall prescribe regulations, when not otherwise fixed in this order, setting forth the qualifications necessary for appointment of the various classes of employees, including physical fitness for work on the Isthmus. The age limit shall in all cases be under 45 years, but the Governor may waive this limit when in his judgment such action is for the good of the service.

8. All appointments shall be made by The Governor of The Panama Canal, or by his authority, except the district judge, district attorney, marshal, clerk of district court, and his assistant.

9. Assignment to duty is vested in the respective heads of the departments, and employees will be expected to perform such duties as may properly be assigned to them. The Governor may discharge an employee at any time for cause, and terminate a provisional appointment when the exigencies of the service so require.

10. The Government reserves the right to pay in any money the value or parity of which is guaranteed by the United States.

11. Employees whose salaries are fixed on a monthly or annual basis will receive no pay for overtime work.

12. Employees above the grade of laborer, appointed with rates of pay per hour or per day, will not be employed over eight hours in any one calendar day, except in case of emergency. The time such employees work over eight hours in one calendar day, and time worked on Sundays and regularly authorized holidays, including January 1, February 22, May 30, July 4, Labor Day, Thanksgiving Day, and December 25, shall be considered overtime for which time and one-half will be allowed. Such employees who worked on the days prior and subsequent to the holidays specifically named above will be allowed their regular pay for eight hours for such days, in addition to pay for any work performed.

13. An employee whose compensation while on duty carries with it subsistence will not be entitled to same or commutation thereof while on leave of absence, and no commutation of quarters shall be paid.

TRANSPORTATION.

14. Employees and dependent members of their families will be granted the regular Government rate upon commercial steamship lines with which arrangements for such rates can be made. While the United States operates a steamship line, either directly or through the Panama Railroad Co., employees and the dependent members of their families will be granted transportation at the same rates and under the same

NOTE.—The provisions of paragraph 1 of the Executive Order of Feb. 2, 1914, were modified by the act of Congress approved Apr. 6, 1914, reading as follows: "The wage scale of the persons employed in the construction of the Panama Canal in effect prior to April first, nineteen hundred and fourteen, shall continue unchanged during the period of actual construction, but not later than June 30, 1916."

conditions as are at present in effect. The rates and conditions are subject to change at any time in the discretion of the Governor.

15. After three years' service, employees who are citizens of the United States will be entitled to free transportation for themselves only, on termination of service, to any port of the United States, except that when such transportation costs the Government more than \$40 the employee must pay the excess.

16. Employees on the gold roll will be granted one complimentary round-trip pass on the Panama Railroad each calendar month. Mileage books for use of such employees and dependent members of their families, or relatives temporarily residing with them, will be furnished at one-half regular tariff rates.

QUARTERS.

17. Where practicable, such bachelor quarters on the Isthmus as may be available from time to time will be assigned all employees desiring them. Family quarters, when available, will be assigned under such rules as may be prescribed by the governor. A charge will be made for rent, fuel, and electric current at such time and in accordance with such regulations as the President may hereafter establish.

MEDICAL CARE.

18. Employees injured will be compensated in accordance with such regulations as are prescribed by law.

19. All employees in cases of illness or injury will receive free medical care and attendance in the hospitals, except in cases of alcoholism or venereal disease. If medical attendance is furnished in quarters, a charge may be made under regulations to be prescribed by the governor. Employees will be charged for medical care and attendance furnished members of their families at the hospitals and at their quarters at such rates and under such regulations as may be prescribed by the governor.

LEAVE REGULATIONS.

20. All employees who are citizens of the United States, and aliens whose compensation is more than \$75 per month, or 40 cents per hour, shall be entitled to leave privileges.

21. Leave will be divided into three classes, viz, (1) annual leave, (2) cumulative leave, and (3) travel leave.

ANNUAL LEAVE.

22. Twenty-four days annual leave will be allowed each employee for each year after entry into service and, if not granted prior to the close of the year, is forfeited and may not be accumulated, except that any annual leave remaining to an employee's credit in a year in which he is granted cumulative leave, may be added to the cumulative leave if taken within two months after the close of his service year.

23. The service year shall date from the day on which an employee's pay in the permanent organization begins.

24. Absences of one-half day or more, when regularly authorized, will be charged against annual leave; also absences on account of illness or injury, upon the certificate of an authorized physician in the service of The Panama Canal, except that in the following classes of cases no payment shall be made for time lost, but the time shall be charged against the annual leave:

(a) Illness due to the fault of the employee, as venereal disease and alcoholism.

(b) Injury due to the employee's willful intention to bring about the injury or death of himself or another.

(c) Elective surgical operations to relieve conditions existing prior to service on the Isthmus.

25. In the case of hourly or per diem employees annual leave on account of sickness or injury shall be based upon a day of eight hours.

26. Not more than 14 days' annual leave may be taken during the first six months of a service year. In case of illness or injury in the first six months, to cover which no annual leave remains to the employee's credit, the time lost will be charged against the annual leave remaining for the year, and payment will be made after completing 10 months of the service year. After the entire 24 days' annual leave has been used additional leave in that service year on account of illness or injury will be deducted from the cumulative leave for that year, and when the cumulative leave becomes due the employee will be paid.

27. After exhausting both annual and accumulative leave for the year, additional absence on account of illness or injury will be without pay, except such compensation as may be prescribed by law for employees receiving personal injuries.

CUMULATIVE LEAVE.

28. Thirty days cumulative leave will be allowed each employee paid on a monthly or annual basis for each year of his service and 20 days to each employee paid on an hourly basis. This leave will be due after completing 10 months' service each year and may be taken when the employee's service can be spared. It may be taken annually or left to accumulate to the credit of the employee: *Provided, however,* That leave may not be accumulated for more than three years. If it is not desired to take the entire leave accumulated, the leave earned for the first year, or the first and second years, may be taken: *Provided,* That no employee, except at termination of service, may be granted more than 90 days leave with pay at one time. Employees will be paid for cumulative leave at the rate earned when the leave became due at the end of the tenth month of each respective year.

29. In case an employee serves part of a year on the monthly or annual basis and part on the hourly basis, he will be allowed 20 days cumulative leave, except that if he has served eight months or more on the monthly or annual basis during the year he will be granted 30 days cumulative leave.

TRAVEL LEAVE.

30. Employees who travel to points outside the Tropics, when on cumulative leave, will be allowed seven days additional leave (or travel leave) with full pay. Travel leave may be allowed approximately once a year and is not cumulative.

31. Employees will be compensated for travel leave and annual leave taken in conjunction with cumulative leave at the rate earned when cumulative leave last became due.

32. After accumulating leave for three years, an employee ceases to earn additional cumulative leave until he is granted all or part of the cumulative leave already earned, unless he shall enter on cumulative leave within two months after completing the third year, or be ordered by the Governor to defer taking leave for official reasons.

33. When an employee's services are terminated on account of misconduct or unsatisfactory service, any annual leave due and travel leave will be forfeited, and cumulative leave will also be forfeited unless written notification has been given that the employee has accumulated the leave, or the four months' period within which the employee may enter on leave has passed. Such written notice must be given by employees as soon as possible after cumulative leave becomes due.

34. When an employee's service is terminated, a cash payment in commutation of leave will be made to him for the number of days cumulative leave due, plus the annual leave due. In the event of his death his estate will be paid the sum due.

35. Employees must enter on cumulative leave within four months after the date when it becomes due, except when accumulated, or unless otherwise authorized by the Governor.

36. Employees must report from leave within one week after the authorized leave expires or forfeit pay for the leave. In case of unavoidable delay, the Governor will decide whether the circumstances warrant an exception to this rule.

37. No restrictions are placed on the localities where leave may be spent.

38. Any employee transferred from the present force to the permanent operating force will be paid at time of transfer, in addition to his regular compensation, the amount he would have received in payment for leave had he been separated from the service at the time of transfer.

39. Leave may be taken only at the convenience of heads of departments, who may direct an employee to accumulate his leave if necessary for the conduct of the work.

40. Leave without pay may be granted by the Governor to all employees, including laborers, for such period as may be prescribed by him.

OFFICE HOURS AND HOURS OF LABOR.

41. Office hours and hours of labor will be fixed by the Governor within the limits prescribed by law.

42. This order shall take effect from and after the 1st day of April, 1914.

CONDITIONS OF LIVING.

Sec. 15. General information.—The Canal Zone is under the jurisdiction of the United States and a civil government is in operation. Elementary schools, including separate schools for white and colored children, have been established at various points in the Canal Zone, together with a four-year high school course, all in charge of competent teachers. Assisted by the Government, churches, clubhouses conducted by the Y. M. C. A., fraternal societies, women's clubs, dancing clubs, and other social organizations are maintained. The hospital and medical service is excellent, the water supply is good and abundant, the settlements are as clean and wholesome as modern methods of municipal engineering can make them. In general, the canal life is that of an ideal American community where everyone has work to do and is living well above the margin of existence.

Sec. 16. Climate.—The Canal Zone has a tropical climate with an average temperature of approximately 80° and with little variation between summer and winter, the wet and dry seasons. While the air is damp and muggy during parts of the rainy season, the nights are generally cool and comfortable. The annual rainfall varies from 129 inches at Colon to 71 inches at Ancon, most of the precipitation occurring during the rainy season of about eight months, extending from April to December.

Sec. 17. Health conditions.—The health conditions on the Isthmus are now excellent. The death and sick rates among the American employees and members of their families are lower than in many cities of the United States. Yellow fever has been extirpated.

Sec. 18. Clothing required.—Warm weather is continuous, and a good supply of light-weight summer underclothing is advisable. Additional articles may be procured

on the Isthmus at any time, either from the Government commissaries or from private dealers. Any clothing of light summer weight will be found serviceable. Clothing of khaki, linen, and duck is also worn.

Sec. 19. Quarters.—Employees are supplied with furnished bachelor quarters which contain all necessary articles of furniture, such as bed, mattress, chairs, etc., but the bed and table linen, dishes, kitchen utensils, and similar articles must be supplied by the employee and can be purchased at the commissaries on the Isthmus. Employees will not be permitted to take their families with them on the first trip to Panama on account of the scarcity of family quarters. No promise is made to furnish family quarters. However, such family quarters as are available are assigned upon application to employees, in their turn, containing all necessary articles of furniture, but on account of the large demand for the same an employee must wait an indefinite length of time before his name will be reached for assignment.

Sec. 20. Meals.—Hotels and mess houses are maintained where good board may be purchased at about 30 cents a meal and upward.

Sec. 21. Commissary.—Commissaries have been established on the Isthmus where canal employees may purchase all necessary supplies, including cold-storage articles and other food, and clothing, at about prices current in the United States. Payment for these articles is made by use of coupon books, which may be purchased for cash, or by a charge against the employee's salary.





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